

KOZLOVSKIY, L.I., inzh.; KARNYEV, N.A., inzh.

The KP-10-Z10 full-circle loading crane. Mekh.stroi. 15 no.12:  
1820 D '58. (MIRA 11:12)

(Cranes, derricks, etc.)

SHCHEPET'EV, A.I., inzh.; KOZLOVSKIY, L.I., inzh.

Truck-mounted hydraulic hoist. Mekh. stroi. 16 no.2:15-17  
F '59. (MIRA 12:2)

(Hoisting machinery)

KOZLOVSKIY, L.I., inzh.; BLYUGLYASS, E.I., inzh.

Cranes for mass housing construction. Stroil. i dor. mashinostr. 5  
no.6:34-39 Je '60. (MIRA 13:7)

(Cranes, derricks, etc.)

KOZLOVSKIY, L.I., inzh.; KARNEYEV, N.A., inzh.

MSK-8-20 new mobile tower crane. Stroi.i dor.mash. 6 no.8:9-12  
Ag '61. (MIRA 14:8)  
(Cranes, derricks, etc.)

VESELOV, A.A., inzh.; KARNEYEV, N.A., inzh.; KOZLOVSKIY, L.I., inzh.;  
STEPANOV, A.I., inzh.; TUSHNYAKOV, M.D., inzh.; SHCHEPET'YEV,  
A.I., inzh.; VDOVENKO, Z.I., red. izd-va; YUDINA, L.A., red.  
izd-va; KASIMOV, D.Ya., tekhn. red.

[Hoisting and conveying equipment for assembly and specialized  
operations] Pod"emno-transportnoe oborudovanie dlia montazhnykh  
i spetsial'nykh rabot. Pod red. A.I.Shchepet'eva. Moskva, Gos-  
stroizdat, 1962. 634 p. (MIRA 16:5)

(Cranes, derricks, etc.) (Hoisting machinery)  
(Conveying machinery)

KOZLOVSKIY, L.I.; TUSHNYAKOV, M.D.; STEPANOV, A.I.; KORNEYEV, N.A.;  
SMETANSKIY, P.V.; SHEPET'YEV, A.I., red.; SPIVAK, S.V.,  
nauchnyy red.; LOGINOVA, R.A., red.; KOGAN, F.L., tekhn.  
red.

[Hoisting, conveying, and special machinery for building and  
repair work] Pod'emno-transportnye i spetsial'nye mashiny dlia  
stroitel'nykh i montazhnykh rabot; katalog spravochnik. Pod  
red. A.I. Shepet'eva. Moskva, No. 2. [Crawler cranes] Krany na  
gusenichnom khodu. 1968. 226 p. (MIRA 16:8)

1. Tsentral'nyy institut nauchno-tekhnicheskoy informatsii po  
avtomatizatsii i mashinostroyeniyu.  
(Cranes, derricks, etc.)

VESELOV, A.A., inzh.; KARNEYEV, N.A., inzh.; KOZLOVSKIY, L.I.,  
inzh.; STEPANOV, A.I., inzh.; TUSHNYAKOV, M.D., inzh.;  
SHCHEPET'YEV, A.I., inzh.; VOLNYANSKIY, A.K., glav. red.;  
SUDAKOV, G.G., zam. glav. red.; TARAN, V.D., red.;  
SEREBRENNIKOV, S.S., red.; MIKHAYLOV, K.A., red.; STAROVEROV,  
I.G., red.; VOLODIN, V.Ye., red.; NIKOLAYEVSKIY, Ye.Ya., red.

[Hoisting and conveying equipment for assembly and specialized  
operations] Pod"emno-transportnoe oborudovanie dlia montazh-  
nykh i spetsial'nykh rabot. Izd.2., dop. Moskva, Stroiizdat,  
1964. 679 p.  
(MIRA 18:4)

KOZLOVSKIY, L.K.

Measurement of the dielectric constant and dielectric loss as a method of studying the strength of ionic bonds in minerals after heating. A. I. Avgustinik and L. K. Kozlovskii. *Zhur. Priklad. Khim.* 25, 265-76 (1952); *J. Applied Chem. U.S.S.R.* 25, 291-302 (1952) (Engl. translation).—It is assumed that any rearrangements of the ions of a mineral on heating is accompanied by a change of the bonds between them and should therefore affect the polarizability and dielec. const. of the solid. The following minerals were investigated: Suran pyrophyllite,  $\text{Al}_2\text{O}_3 \cdot 4.12 \cdot \text{SiO}_2 \cdot 1.68 \text{H}_2\text{O}$  (I); Mozr-Ovruch pyrophyllite,  $\text{Al}_2\text{O}_3 \cdot 4.615 \text{SiO}_2 \cdot 1.071 \text{H}_2\text{O}$  (II); Onot tale,  $3\text{MgO} \cdot 4.17 \text{SiO}_2 \cdot 1.17 \cdot \text{H}_2\text{O}$  (III); Prosyauov kaolin  $\text{Al}_2\text{O}_3 \cdot 2.07 \text{SiO}_2 \cdot 2 \text{H}_2\text{O}$  (IV); Glukhovets kaolin  $\text{Al}_2\text{O}_3 \cdot 2.17 \text{SiO}_2 \cdot 2 \text{H}_2\text{O}$  (V). The analyses and optical characteristics of these minerals are given in a table. From moistened powders of the materials, disks were pressed and heated at temps. between  $500^\circ$  and  $1350^\circ$ . Ag electrodes were spread on the sample by using a paste of  $\text{Ag}_2\text{CO}_3$ , turpentine, and colophony. After drying at  $110^\circ$  the samples were heated for 10-12 min. at  $800^\circ$ . The hygroscopic moisture was detd. and correction made for the porosity of the samples. The plot of the dielec. const.  $\epsilon$  for kaolin and tale against temp. is characterized by an increase of  $\epsilon$  at  $900\text{--}1050^\circ$  for kaolin, and  $800\text{--}900^\circ$  for tale. This is explained by considerable polarization effects as a result of weakening of interionic bonds due to the formation of unstable  $\gamma$ -alumina in kaolin and  $\gamma$ -phases in tale. No rise in the  $\epsilon$  curve was observed for pyrophyllite. X-ray and crystalloptical analysis show that mullite is formed directly by rearrangement of the pyrophyllite lattice. The dielec. loss at  $10^6$  Hz in samples of pyrophyllite shows a sharp max. at  $800^\circ$ , which can be explained by the increase of cond. due to the liberation of  $\text{Al}^{+++}$  in the lattice. No max. of this kind occurred in heated tale, owing to the binding of  $\text{Mg}^{++}$  in the unstable  $\gamma$ -phase. F. Schossberger

11/29/54



PAVLOVA, Zinaida Pavlovna, 1918- . carpenter; AKHANINA, Valentina Ivanovna, 1908- ,  
carpenter; KOZLOVSKIY, L.M., carpenter.

[Assemblage of wooden panels for partitions and subflooring. Experience of  
stakhanovite carpenters Z.P.Pavlova, V.I.Akhanina and L.M.Kozlovskii] Sbornik  
dereviannykh shchitov dlia peregorodok i nakata; opyt stakhanovtsev-plotnikov  
Z.P.Pavlovoi, V.I.Akhaninoy i L.M.Kozlovskogo. Moskva, 1952. 13 p.  
(MLA 6:7)

1. Moscow. Vsesoyuznaya tsentral'naya normativno-issledovatel'skaya stantsiya.
2. Trest Minmashstroya, g. Nikolayev (for Kozlovskiy). 3. Ves'yegonskiy de-  
revoobdelochnyy kombinat (for Pavlova and Akhanina). (Carpentry)

USSR/Chemistry - Ceramics; Refractories Mar 52

"Measurement of Dielectric Permeability and Loss as Method of Studying the Strength of Ion Bonds in Minerals After Their Calcining," A. I. Avgustinik, L. V. Kozlovskiy, Chair of Ceramics, Leningrad Technol Inst imeni Lensoviet

"Zhur Priik Khim" Vol XXV, No 3, pp 265-276

Assumed that any regrouping of the ions in the cryst lattice of a mineral during calcining must be accompanied by a change of bonding between the ions, which can be detd by measuring the dielec permeability. This was confirmed in investigation

207T32

USSR/Chemistry - Ceramics; Refractories Mar 52  
(Contd)

carried out on pyrophyllites, talcs and caolins. Tabulates results and describes in detail. On the basis of results obtained, certain conclusions could be drawn in regard to the structure of the mullite lattice.

207T32

KOZLOVSKIY, L. V.

KOZLOVSKIY, L.V.

USSR/Chemical Technology. Chemical Products and Their  
Application - Silicates. Glass. Ceramics. Binders.

I-9

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 12509

Author : Avgustinik A.I., Kozlovskiy L.V.

Title : Concerning the Strength of Ionic in Pyrophyllite After  
Calcining

Orig Pub : Zh. prikl. khimii., 1956, 29, No 7, 1035-1040

Abstract : Investigated was the strength of bonds between Al ions  
and Si ions in pyrophyllite of Mozyr'ovruch deposit,  
calcined at different temperatures, by the method of  
chemical treatment (solutions of alkalies and acids).  
It was found that on action of a 6% solution of HCl on  
samples of pyrophyllite calcined at different tempera-  
tures, the solubility of the sample calcined at 800°  
was highest amounting to 3.60 - 3.83% on the basis of  
the calcined material (slight solubility of  $Al_2O_3$  is  
due to the "closed" structure of pyrophyllite block).

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USSR/Chemical Technology. Chemical Products and Their  
Application - Silicates. Glass. Ceramics. Binders.

I-9

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 12509

On treatment of calcined samples of pyrophyllite with 10% solution of KOH, greatest solubility of silica is found in samples calcined at 1100°. This is due to maximal weakening of Si-O-Si bonds in the crystal lattice of pyrophyllite. Weakening of bonds between ions in the crystal lattice of pyrophyllite provides conditions for a rearrangement of the pyrophyllite lattice into crystalline phases that are more stable at high temperatures (mullite, cristobalite).

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*Kozlovskiy, L.V.*

AUTHORS: Avgustinik, A.I., Kozlovskiy, L.V., Kononov, P.F. 76-11-18/35

TITLE: On the Behavior of Muscovite When Heated (K voprosu ob otnoshenii muskovita k nagrevaniyu)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1957, Vol.31, Nr 11, pp.2495-2500 (USSR)

ABSTRACT: Here Karelian muscovite with a comparatively high heat- and chemical resistance was investigated. Its chemical composition was as follows:  $\text{SiO}_2$  - 44.80,  $\text{TiO}_2$  - 0.25,  $\text{Al}_2\text{O}_3$  - 35.54,  $\text{Fe}_2\text{O}_3$  - 3.05,  $\text{CaO}$  - 0.32,  $\text{MgO}$  - 1.37,  $\text{Na}_2\text{O}$  - 1.58,  $\text{K}_2\text{O}$  - 8.82, losses by annealing - 4.70%. Individual rutile- and chlorite crystals were admixed. The following is shown: 1.) Separation of water in muscovite dehydration takes place in two stages: up to  $400-450^\circ$  10 - 12%, and in the interval between 600 and  $900^\circ$  the most essential part is separated, which is constitutionally connected with the muscovite crystal lattice. 2.) Expansion of the sample, which is produced from finely ground muscovite, also takes place in two stages: a) at  $400^\circ$  (about 2% of the initial length), b) at  $850-900^\circ$  (about 1.7% of the initial length), which can be brought into connection with the separation of water in this stage. 3.) The action of a 6% hydrochloric acid solution upon the muscovite, which was annealed at different temperatures, proves the existence of an

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On the Behavior of Muscovite When Heated

76-11-18/35

optimum of solubility of the pure clay component of the muscovite at 800° C because of a considerable weakening of the inter-ion linkages at this temperature. The absolute quantity of R<sub>2</sub>O<sub>3</sub>-oxides passing over into the solution is, however, not large. This is connected with the closed structure of the muscovite lattice packet. 4.) Judging from the refraction indices of the muscovite annealed at 1000° C, an isotropic substance, and with 1100° C a new crystal phase with N<sub>g</sub>=1.540 and N<sub>p</sub>=1.536 occur. 5.) The data of the structural analysis prove that, up to a temperature of 1000° C, the muscovite lattice undergoes no change, but that it is completely destroyed beyond 1100° C, and that a phase  $\alpha$ -K<sub>2</sub>O.Al<sub>2</sub>O<sub>3</sub>.2SiO<sub>2</sub>, which, at a temperature of 1300° C decomposes into corundum, "mullite" and glass, is formed. There are 3 figures, 2 tables, and 20 references, 12 of which are Slavic.

ASSOCIATION: Institute for Technology imeni Lensovet, Leningrad  
(Tekhnologicheskii institut im. Lensoveta, Leningrad)

SUBMITTED: July 23, 1956

AVAILABLE: Library of Congress  
Card 2/2

83493

15.2210

S/081/60/000/013(I)/011/014  
A006/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 13(I), p. 448,  
# 53450

AUTHORS: Avgustinik, A. I., Kozlovskiy, L. V.

TITLE: The Manufacture of Aluminum Oxide Protective Fixtures for High-  
Temperature Plunging Thermocouples by Plastic Forming and Casting  
Into Gypsum Molds

PERIODICAL: Tr. Leningr. tekhnol. in-ta im. Lensovet, 1959, No. 57, pp. 15-19

TEXT: The author investigated problems of recrystallization sintering of  $Al_2O_3$  by introducing into the composition a small amount of fine and superfine grained mineralizers. They studied vibromilling of commercial  $Al_2O_3$  and preparation of protective jackets for plunging thermocouples up to 500 mm length in the capacity of internal fixtures of high-temperature plunging thermocouples with cermet tips for measuring temperatures up to 1,600-1,650°C. It is established that in the vibromilling of commercial  $Al_2O_3$  for 5-6 hours, the yield of particles of  $< 2 \mu$  size is 60 to 70% in dry milling and 90% in wet milling. Pure  $Al_2O_3$  pipes are manufactured by the method of plastic forming

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S/081/60/000/013(I)/011/014  
A006/A001

The Manufacture of Aluminum Oxide Protective Fixtures for High-Temperature  
Plunging Thermocouples by Plastic Forming and Casting Into Gypsum Molds

with addition of an 18 - 20% solution of polyvinyl alcohol as plasticizer or by  
casting alumina dross of 33% moisture and 3.3 pH. The pipes are roasted after  
drying, first to 1,200 - 1,250°C and then to 1,600 - 1,650°C.

From the authors' summary.

Translator's note: This is the full translation of the original Russian  
abstract.

Card 2/2



L 06295-57 ENT(m)/EMP(e)/EMP(t)/ETI IJP(c) AT/WH/JD/JG/GD

ACC NR: AT6027151

SOURCE CODE: UR/0000/65/000/000/0241/0244

AUTHOR: Avgustinik, A. I.; Golikova, O. A.; Klimashin, G. M.; Kozlovskiy, L. V.;  
Nashpor, V. S.

ORG: none

TITLE: Dependence of certain electrophysical properties of titanium monocarbide on  
the carbon content

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Issledovaniya v oblasti  
khimii silikatov i okislov (Studies in the field of chemistry of silicates and oxides).  
Moscow, Izd-vo Nauka, 1965, 241-244

TOPIC TAGS: titanium compound, carbide, Hall constant, Hall mobility, conduction  
electron, resistivity, carbon

ABSTRACT: The dependence of the resistivity  $\rho$ , thermal emf  $\alpha$  and Hall constant  $R$  of  
titanium monocarbides on the carbon content was studied in the region of homogeneity  
on samples prepared from powdered Ti and acetylene black at 1750°. All the samples  
showed a negative Hall constant, indicating an n-type conductivity; the absolute value  
of  $R$  decreases rapidly with decreasing carbon content, indicating an increase in the  
concentration of free conduction electrons. The absolute differential thermal emf  
also decreases with diminishing carbon content. The resistivity decreases with de-  
creasing carbon content in monocarbide phases  $TiCx$ , this being in accord with the in-

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L 06295-67

ACC NR: AT6027151

creasing free electron concentration. The Hall mobility of electrons decreases from carbon-rich to carbon-poor titanium monocarbides, due to an increase in the fraction of conduction electrons scattered by the carbon vacancies. Orig. art. has: 3 figures and 1 table.

SUB CODE: 07,20/ SUEM DATE: 31Mar65/ ORIG REF: 009/ OTH REF: 016

Card

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L 06296-67 EWT(m)/EWP(e)/EWP(t)/ETI LJP(c) AT/WH/JD/JG/GD

ACC NR: AT6027152 (A) SOURCE CODE: UR/0000/65/000/000/0244/0250

AUTHOR: Avgustinik, A. I.; Golikova, O. A.; Klimashin, G. M.; Kozlovskiy, L. V.

ORG: none

TITLE: Effect of oxygen on certain properties of titanium carbide

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Issledovaniya v oblasti khimii silikatov i okislov (Studies in the field of chemistry of silicates and oxides). Moscow, Izd-vo Nauka, 1965, 244-250

TOPIC TAGS: titanium compound, carbide, oxygen impurity

ABSTRACT: In a study of alloys of the TiC-TiO-Ti system, x-ray structural data showed that the contamination of  $TiC_x$  with oxygen causes a decrease in the size of the unit cell, this effect being more pronounced the closer the composition is to the stoichiometric proportion of  $TiC_x$ . This along with the influence of vacancies accounts for the great scatter of results obtained by various authors in their study of the lattice parameter of  $TiC_{1.0}$ . The melting point and microhardness of titanium carbide contaminated with oxygen decrease with increasing number of defects in the lattice, and to a lesser degree depend on the kind of metalloid atoms. As the oxygen content rises, the microbrittleness decreases at first, then begins to increase because of increasing ionic bond character. The electron concentration in titanium carbide containing some oxygen is influenced by two effects: when the number of vacancies in the metalloid

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ACC NR: AT6027152

sublattice (i. e., the number of conduction electrons) is small, the current carrier concentration grows, since oxygen atoms give up to the conduction band their excess electrons relative to carbon. When the number of vacancies in the metalloid sublattice is large, the oxygen atoms do not give up their electrons, and oxygen in its reaction with titanium ties up the titanium electrons, causing a drop in the carrier concentration. Titanium carbide containing an oxygen admixture shows a metallic temperature dependence of the resistivity and thermal emf. The mobility of electrons at  $T = \text{const}$  drops with their increasing concentration and is relatively insensitive to the concentration of defects in the metalloid sublattice. The predominant scattering mechanism appears to involve scattering by lattice vibrations, and the energy dependence of the relaxation time is close to that observed in semiconductors. Orig. art. has: 13 figures.

SUB CODE: 07/ SUBM DATE: 09Apr65/ ORIG REF: 009/ OTH REF: 003

Card 2/2 *gd*

L 20321-66 EWT(m)/EWP(t) IJP(c) JD  
 ACCESSION NR: AP5018912

UR/0363/65/001/006/0830/0834  
 546.821'261

AUTHOR: Avgustinik, A. I.; Klimashin, G. M.; Kozlovskiy, L. V.

TITLE: Investigation of conditions of synthesizing pure titanium carbide by sintering

SOURCE: AN SSSR. Izvestiya. Neorganicheskiy materialy, v. 1, no. 6, 1965, 830-834

TOPIC TAGS: carbide, titanium carbide, titanium carbide synthesis

ABSTRACT: An attempt has been made to synthesize high-purity titanium carbide by sintering a mixture of carbon black with 99.98%-pure titanium dioxide, 99.87%-pure electrolytic titanium or 99.98%-pure titanium. The mixture of components was vacuum sintered at 1570-2270K. Optimum results were obtained from a mixture containing 99.98%-pure titanium in an amount exceeding the stoichiometric by 7.5-10%, to compensate the loss of titanium by evaporation. Sintering of this mixture at 2020K yielded high-purity titanium carbide which contained 20% combined carbon and had a crystal lattice parameter of 4.3281 Å. Oxygen in the initial material reduces

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L 20321-66

ACCESSION NR: AP5018912

the lattice parameter of titanium carbide and makes the synthesis more difficult.  
Orig. art. has: 4 figures and 2 tables. [ND]

ASSOCIATION: Leningradskiy khimiko-tekhnologicheskii institut im. Lensoveta  
(Leningrad Chemical Technological Institute)

SUBMITTED: 13Mar65

ENCL: 00

SUB CODE: MM, SS

NO REF SOV: 005

OTHER: 006

ATD PRESS: 4076

Card 2/2 *du*

L 9244-66 EWT(1)/EWP(a)/EWT(m)/EWP(t)/EWP(k)/EWP(z)/EWP(b) LJP(c) JD  
 ACC NR: AP5022743 SOURCE CODE: UR/0181/65/007/009/2860/2862  
 AUTHOR: Golikova, O. A.; Avgustinnik, A. I.; Klimashin, G. M.; Kozlovskiy, L. V.  
 ORG: Institute of Semiconductors AN SSSR (Institut poluprovodnikov AN SSSR); Leningrad Technological Institute im. Lensovet (Leningradskiy tekhnologicheskii institut)  
 TITLE: Electrical properties of titanium carbide  
 SOURCE: Fizika tverdogo tela, v. 7, no. 9, 1965, 2860-2862  
 TOPIC TAGS: electric property, titanium compound, carbide, energy band structure, thermoelectromotive force, Fermi level  
 ABSTRACT: The authors study the electrical properties of titanium carbide as a function of carbon concentration. The data are used as a basis for an explanation of the energy spectrum and mechanism responsible for scattering of current carriers. The resistivity, thermoelectromotive force and Hall constant were measured in specimens of  $TiC_x$  ( $x = 0.43-1.0$ ). Powder metallurgy methods were used for producing the specimens. Curves are given for resistivity and thermoelectromotive force as functions of temperature in the 300-1500°K range for various values of  $x$ . Hall concentrations, defect concentrations, mobilities and effective masses are tabulated for various carbon concentrations. It was found that the effective mass decreases with an increase

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L 9244-66

ACC NR: AP5022743

in concentration. It is assumed that the Ti-C bond is basic in stoichiometric TiC and that the Ti-Ti bond is strongly screened. The Ti-Ti bond becomes more and more important as the carbon content in the compound is increased. The stronger this bond becomes, the wider the conduction band and the greater the deviation from semiconductor properties. The rapid increase in thermoelectromotive force at high temperatures is explained by assuming that the "metal" conduction band overlaps the higher conduction band of stoichiometric titanium carbide. At high temperatures, the Fermi level falls into the higher band and thermoelectromotive force begins to increase more rapidly. This hypothesis is confirmed by  $\alpha(T)$  curves. Orig. art. has: 2 figures, 1 table.

SUB CODE: 20/

SUBM DATE: 14Apr65/

ORIG REF: 003/

OTH REF: 002

Card 2/2 *pu*



L 15736-66 EWT(1)

ACC NR: AP6000898

SOURCE CODE: UR/0181/65/007/012/3698/3700

AUTHORS: Golikova, O. A.; Avgustinnik, A. I.; Klimashin, G. M.;  
Kozlovskiy, L. V.; Ordan'yan, S. S.; Snetkova, V. A.

ORG: Institute of Semiconductors, AN SSSR, Leningrad (Institut  
poluprovodnikov AN SSSR)

TITLE: Electric properties of carbides of the transition metals of  
group IV

SOURCE: Fizika tverdogo tela, v. 7, no. 12, 1965, 3698-3700

TOPIC TAGS: titanium compound, zirconium carbide, hafnium compound,  
carbide, thermal emf, Hall constant, resistivity, transition element

ABSTRACT: The purpose of the investigation was to compare the elec-  
tric properties (thermal emf, resistivity, Hall constant) of TiC, ZrC,  
HfC as functions of the composition in the temperature interval 300  
-- 1500K. The data on TiC were taken from an earlier investigation  
by the authors (FTT v. 7, 2860, 1965). The ZrC and HfC were prepared  
by the same technology as the TiC. The plots of all the measured

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ACC NR: AP6000898

quantities against the carbon concentration are approximately the same for all three carbides. This demonstrates that the scattering mechanism and energy spectrum of the carriers are the same in all the compounds. An unexpected result is the fact that the effective masses of the three carbides are equal, since their lattices have different lattice constants and the participating electrons come from different shells. From the fact that the ratio of the distances between the metal and carbide atoms ( $R$ ) and the radii of the metallic atoms ( $r$ ) is also constant for all carbides, it is concluded that the orbitals of the metal atoms overlap equally. This explains the equality of the effective masses. The carrier scattering mechanism is briefly discussed. Orig. art. has: 2 figures, 1 formula, and 1 table.

SUB CODE: 07 / SUBM DATE: 23Jul65/ ORIG REF: 004/ OTH REF: 003/

Card

2/2

L 07823-67 EWP(e)/EWP(m)/EWP(t)/ETI/EWP(k) IJP(c) JD/WW/JC/WH  
ACC NR: AP6034204 (N) SOURCE CODE: UR/0153/66/009/004/0528/0532

AUTHOR: Avgustinik, A. I.; Kozlovskiy, L. V.; Klimashin, G. M. 52  
B

ORG: Department of Chemistry and the Technology of Fine Technical  
Ceramics, Leningrad Technological Institute im. Lenolet (Kafedra khimii  
i tekhnologii tonkoy tekhnicheskoy keramiki, Leningradskiy tekhnologi-  
cheskiy institut)

TITLE: High-temperature reactions between <sup>27</sup>titanium <sup>27</sup>carbide and certain  
oxides

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 9, no. 4,  
1966, 528-532

TOPIC TAGS: titanium carbide, refractory oxide, zirconia, hafnium  
oxide, thorium, beryllia, high temperature ceramic material

ABSTRACT: A discrepancy between calculated and experimental temperatures  
of titanium carbide reactions with refractory <sup>27</sup>ZrO<sub>2</sub>, <sup>27</sup>HfO<sub>2</sub>, <sup>27</sup>ThO<sub>2</sub>,  
and <sup>27</sup>BeO led to a study of the reaction products which were obtained by  
sintering at 1770—2470K in vacuum the compacted mixtures of pure TiC  
with 10—80 wt.% of one of the refractory oxides. <sup>27</sup>Weight loss,  
shrinkage, density, and porosity of the sintered samples were measured  
and the effects of the sintering temperature and the oxide content in

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UDC: 546.821+546.261

L 07823-67

ACC NR: AP6034204

the starting mixture were evaluated. The data obtained, the lattice parameter data obtained by x-ray phase analysis, and the micrographs made it possible to establish in each case the mechanism of reactions and the phase formation. As a general rule, formation of TiC-base solid solutions with interstitial atoms of the second metal occurs in the presence of a large excess of the oxide and a titanium oxycarbide and metal form in the case of deficiency of the oxide in the starting mixture. Evolution of CO was detected in all cases. The formation of  $\text{Be}_2\text{C}$  was detected by x-ray analysis in the reaction of TiC with 80% BaO. Complex oxycarbide solid solutions were formed in the reactions of TiC with 50%  $\text{ZrO}_2$  or  $\text{HfO}_2$  [sic].  $\text{ThO}_2$  was found to be the least reactive of all the oxides studied, in agreement with theory. The reaction of TiC with 50%  $\text{ThO}_2$  at 2470K yielded a spongy surface phase of  $\text{ThC}_x$ . Orig. art. has: 3 figures, 1 table, and 3 formulas.

SUB CODE: 11/ SUBM DATE: 12Oct64/ ORIG REF: 010/ ATD PRESS: 5101

Card 2/2 *bc*

KOZLOVSKIY, M.

"Spot Surface Hardening of Cast Iron" Stanki i Instrument, 10, No. 2, 1939. Engineer.

Report U-1505, 4 Oct 1951.

SO: Monthly List of Russian Accessions, Library of Congress, \_\_\_\_\_ 1953, Uncl.

KOZLOVSKIY, M., inzhener-podpolkovnik; GAMULIN, A., inzhener-mayor, kand.  
tekhnicheskikh nauk

Reliability of rocket systems and time needed for preparation.  
Av.i kosm. 44 no.4:74-77 '62. (MIRA 15:4)  
(Guided missiles)

KOZLOVSKIY, M. [Kozlovs'kyi, M.]

More than local peculiarities. Znan. ta pratsia no.4:28-30  
Ap '59.

(MIRA 12:10)

(Japan--Description and travel)

KOZLOVSKIY, M. [Kozlovs'kiy, M.]; POTAPSKAYA, I. [Potaps'ka, I.]

Beirut, a city of contrasts; a photosketch. Znan. ta pratsia  
no.5:26-27 My '60. (MIRA 13:10)  
(Beirut--Description)



KOZLOVSKIY, M., inzh.-podpolkovnik

Control equipment for air-to-air rockets. Av.1 kosm. 45 no.2:  
73-78 F '63. (MIRA 16:2)  
(Airplanes, Military--Armament)  
(Guided missiles--Radar equipment)

KOZLOVSKIY, Mikola[Kozlovs'kyi, Mykola; TEPLITSKIY, K.[Teplyts'kyi,K.]

[In fraternal Bulgaria; journey with a camera]U bratnii Bolgarii; podorozh z fotoaparatom. Kyiv, Derzh.vyd-vo obrazotvorchoho mystetstva i muzychnoi lit-ry URSR, 1961. 6 p.

(MIRA 15:8)

(Bulgaria--Views)

KOZLOVSKIY, M. [Kozlovs'kyi, M.]; POTAPSKAYA, I. [Potaps'ka, I.]

Sun loves this land. Znan.ta pratsia no.8:24-25 Ag '62.

(MIRA 15:12)

(Capri—Description and travel)

(Messina—Description)

KOZLOVSKIY, Nikola Fedorovich

[Across 15 seas and 2 oceans; travels] Cherez 15 morei i  
2 okeana; puteshestviia. Kiev, Mystetstvo, 1964. 1 v.  
(MIRA 18:9)

KOZLOVEKIY, M.

From all mainlands and continents. Inform.bibl.VDNEH no.1:45-46  
Ja '65. (MIRA 18:3)

1. Zamestitel' nachal'nika inostrannogo otdela Vystavki dostizheniy  
narodnogo khozyaystva SSSR.

BESHKETO, V.K.; KOZLOVSKIY, M.G.; KUPRIN, V.A.; FLEYSHMAN, V.A.;  
MALAKHOV, K.N., inzh., retsenzent; POTAPOV, V.P., inzh.,  
red.; VOROB'YEVA, L.V., tekhn. red.

[Transportation service for industrial enterprises; from  
the experience of the West Siberian Railroad] Transportnoe  
obslyuzhivanie promyshlennykh predpriyatii; iz opyta Zapadno-  
Sibirskoi zheleznoi dorogi. Moskva, Transport, 1964. 86 p.  
(MIRA 17:1)

KOZLOVSKIY, M.G., gornyy inzh.; GAYKO, E.I., gornyy inzh.

Mechanization of labor consuming operations in the mines of  
Ordzhonikidzeugol' Trust. Ugol' 36 no.8:38-43 Ag '61.  
(MIRA 14:9)

1. Trest Ordzhonikidzeugol'.  
(Donets Basin--Coal mining machinery)





KOZLOVSKIY, N. I., Cand Phys-Math Sci--(diss) "Experimental study of the growth of crystals from solutions in the light of the theory of dislocations." Mos, Publishing House of the Acad of Sci USSR, 1957. 15 pp with graphs (Mos State U in N.V. Lomonosov. Phys Faculty. Chair of Crystallog<sup>Physics</sup>~~raphy~~), 130 copies (Kl,25-58,107

-15-

Kozlovsky, M. L.

Kinetics of crystallization at constant temperature and supersaturation. M. L. Kozlovskiy, V. I. Lomozomov State Univ., Moscow. *Kristallografiya* 7: 782-4 (1967). The equation describing the rate of crystal growth of Seignette-type crystals at  $10^{-4}$  mole/l. and  $10^{-3}$  mole/l. was derived. The rate of growth of crystals depends on the size of the seed. A. P. Koshchik.

AUTHOR: Kozlovskiy, M.I.

70-3-2-12/26

TITLE: The Formation of Screw Dislocations When a Crystal Grows over Solid Particles (Obrazovaniye vintovykh dislokatsiy pri obrastanii kristallom tverdykh chastits)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 2, pp 209 - 213 (USSR).

ABSTRACT: It is experimentally shown that screw dislocations can be formed as a consequence of the inclusion of foreign particles in the process of the growth of crystals from solutions and from melts. It is established that not all foreign particles encountered by the growing crystal are included by it and that only part of the included particles cause the appearance of screw dislocations. The probability of the formation of screw dislocations on the inclusion of extraneous particles by a growing crystal is calculated.

Crystals of  $\beta$ -methyl-naphthalene were used ( $C_{11}H_{10}$ ), growing from solution in ethyl alcohol in a closed cell on a microscope slide. This slide was fixed on the microscope stage attached to a water-circulating thermostat controlling the temperature to 0.01 °C. The temperature was lowered until crystals began to form; it was then raised a little so that almost all the

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The Formation of Screw Dislocations When a Crystal Grows over Solid  
Particles

70-3-2-12/26

crystals re-dissolved. The temperature was then lowered slowly and the remainder were allowed to grow. Their progress was followed with a micro-cinematograph arrangement (38 frames per sec. at a magnification of 100). The thickening layers were visible because of the changing interference colours. Observation was through parallel Nicols. The illumination was oblique. Screw dislocations originating when the growing steps encountered foreign particles were successfully photographed. The fraction number of dislocations over number of foreign particles per mm<sup>2</sup> ( $n/n_0$ ) was plotted against the speed of growth in  $\mu$ /sec.  $n/n_0$  rose roughly parabolically from 0 to 0.25 at 80  $\mu$ /sec.

There are 9 figures and 7 references, 5 of which are Soviet and 1 French, 1 English.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova  
(Moscow State University imeni M.V. Lomonosov)

SUBMITTED: May 15, 1957  
Card 2/2

AUTHOR: Kozlovskiy, M.I.

70-3-2-21/26

TITLE: The Formation of Screw Dislocations When Two Layers Growing on the Surface of a Crystal Meet (Obrazovaniye vintovykh dislokatsiy pri vstreche dvukh rasprostranyayushchikhsya po poverkhnosti kristalla sloyev)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 2, pp 236 - 237 (USSR).

ABSTRACT: See paper by the same author - Kristallografiya, 1958, Vol 3, pp 209-213. The same substances and technique as in the previous paper were applied. It was observed that when two layers met a spiral was often generated, the rate of growth of which was given by the equation:  $V_H = h_{st} V_{st} / y$  where  $V_H$  is the rate of growth of the crystal in the direction of the normal at the point of emergence of the axis of the screw dislocation and  $V_H = h_{st} N$ ,  $h_{st}$  is the height of the step (Burgers vector),  $N$  is the number of new turns of the spiral appearing in unit time,  $y = V_{st} t$   $y$  being the distance between turns,  $V_{st}$  the rate of movement of the step and  $t$  the period of instantaneous rotation of the spiral at its centre

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70-3-2-21/26  
The Formation of Screw Dislocations When Two Layers Growing on the  
Surface of a Crystal Meet

and  $N=1/t$ . Enlarged frames from the cine film taken  
through crossed Nicols of the growth process are reproduced.  
There are 1 figure and 6 references, 2 of which are Soviet,  
3 English and 1 French.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni  
M.V. Lomonosova (Moscow State University imeni  
M.V. Lomonosov)

SUBMITTED: October 1, 1957.

Card 2/2

AUTHORS: Kozlovskiy, M.I. and Lemmleyn, G.G. 70-3-3-18/36

TITLE: Investigation of the Layer-spiral Growth of Crystals of  $\beta$ -methylnaphthalene, Growing from Solution in Ethyl Alcohol  
(Issledovaniye sloisto-spiral'nogo rosta kristallov  $\beta$ -metilnaftalina, rastushchikh iz rastvora v etilovom spirte)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 3, pp 351 - 357  
(USSR).

ABSTRACT: For growth layers, growing tangentially on the 001 faces of crystals of  $\beta$ -methylnaphthalene from a solution in ethyl alcohol, the dependence of growth speed on super-saturation and on the layer thickness have been investigated. It was found that for small super-saturations, the growth of thick layers (at least 10-15 unit cell heights thick) predominates but that for large super-saturations the layers are only 1-10 unit cells thick. For the same substance, the dependence  $v(h)$  of velocity on thickness for growth from vapour and from the melt was studied and it was shown that the dependence is the same whether the growth is from vapour, solution or melt. The dependence of the distance between turns of the spirals on super-saturation and also the dependence of the magnitude of the period of rotation of the spiral on super-saturation were investigated. Observations were made using a thermostatted cell, the tempera-

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Investigation of the Layer-spiral Growth of Crystals of  $\beta$ -methyl-naphthalene, Growing from Solution in Ethyl Alcohol <sup>70-3-3-18/36</sup>

tures of the upper and lower faces being controlled separately, on the stage of a microscope. Changes in thickness were measured by observing interference colours and recording was by micro-cinematography.

There are 9 figures and 8 references, 5 of which are Soviet and 3 English.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im.  
M.V. Lomonosova (Moscow State University imeni  
M.V. Lomonosov)

SUBMITTED: December 27, 1957  
Card 2/2



AUTHOR: Kozlovskiy, M.I.

SOV/70-3-4-13/26

TITLE: On the Question of the Spiral Growth and Solution of Crystals (K voprosu o spiral'nom roste i rastvorenii kristallov)

PERIODICAL: Kristallografiya, 1958, Vol 3, nr 4, pp 483-487 (USSR)

ABSTRACT: Using the microscope installation with cinematographic recording described earlier (Kristallografiya, 1958, Vol 3, pp 209 and 509), the transitional processes occurring between the spiral growth of crystals and their spiral solution and vice versa were examined. It was again confirmed that the solution spirals and the growth spirals are generated around the points of emergence of the axes of screw dislocations at the surface of the crystal and at the same centre the growth spiral has the opposite sign to the solution spiral. It has been shown that the process of transition from growth from solution to solution is qualitatively the same as the process of transition from growth from the vapour phase to evaporation. The particular material used was  $\beta$ -methylnaphthalene and growth on the 001 face was studied at 10 - 12 °C, where the solubility in ethyl alcohol is about 15 g/100 ml. The illumination was oblique and plane

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SOV/70-3-4-13/26

On the Question of the Spiral Growth and Solution of Crystals

polarised, half of the condenser being obscured by a knife edge.  $n_z - n_x = 0.276$  and layers of 1 000 to 2 000 Å were readily visible. The growth and dissolution of crystals were recorded photographically at a speed up to 3 frames/sec (8 frames are reproduced) at which the temperature was changed. The spirals were of the usual Archimedean type.

The supersaturation and unsaturation were of the order of 0.1 °C. Acknowledgments to Prof. G.G. Lemmlein. There are 2 figures and 10 references, 3 of which are Soviet and 7 English.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im.  
M.V. Lomonosova (Moscow State University imeni M. V.  
Lomonosov)

SUBMITTED: June 25, 1957

Card 2/2

AUTHOR: Kozlovskiy, M.I.

SOV/70-3-4-23/26

TITLE: Apparatus for the Microscopic Examination of the Growth of Crystals from Solution (Ustanovka dlya mikroskopicheskogo issledovaniya rosta kristallov iz rastvorov)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 4, pp 509-510 (USSR)

ABSTRACT: Parts of this apparatus have been described earlier (Kristallografiya, 1957, Vol 2, p 760 and 1958, Vol 3, p 209). A saturated solution is circulated by a pump through a glass cell on a microscope stage. The stock solution in the reservoir is in a thermostat and the paths of the solution are maintained at definite temperatures, the solution heater being in the return pipe. The lower side of the observation chamber has a cooling-water cell attached to it and the upper side of the cell is electrically heated. The main temperature measurements are made in the reservoir but a differential thermocouple of high accuracy ( $\pm 0.02^{\circ}\text{C}$ ) measures the supersaturation of the solution under observation. To detect the point of saturation of a solution, use is made of the observation

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SOV/70-3-4-23/26  
Apparatus for the Microscopic Examination of the Growth of  
Crystals from Solution

that when a crystal is not in equilibrium and is dissolving  
or crystallising currents of variable density can be seen  
round it with suitable illumination - the crystal, illum-  
inated by parallel light, is projected onto a screen. The  
accuracy of such determinations is 0.1 - 0.05 °C.  
There are 2 figures and 3 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet  
im. M.v. Lomonosova (Moscow State University  
imeni M.v. Lomonosov)

SUBMITTED: June 25, 1957

Card 2/2

L 18974-63

EWf(q)/EWf(m)/BDS

AFFTC/ASD

JD

ACCESSION NR: AT3001913

S/2912/62/000/000/0193/0198

AUTHOR: Kozlovskiy, M. I.

TITLE: Spiral formations on Bi crystals

SOURCE: Kristallizatsiya i fazovyye perekhody.\* Minsk, Izd-vo AN BSSR, 1962, 193-198

TOPIC TAGS: crystal, crystallization, crystallography, trigonal, syngony, Bi, spiral, growth, rhomboheder

ABSTRACT: The paper describes the mechanism of the formation of the "skeletal spirals" observed in Bi crystals which, as is known, pertain to the trigonal syngony and which form rhomboheders differing very little from a cubic shape and are nearly square-faced ( $87^{\circ}34'$ ). The tendency of Bi crystals toward lamellar growth suggests their capability of forming spiral growths. The spiral formations illustrated in photographs exhibit a great step height and a great distance between coils in the spirals. For example,  $h=100-200$  micron,  $y=200-500$  micron. There are three types, depending on whether the center of the spiral is below the edge, coplanar with the edge, or above the edge. The dynamics of the spiral formation is explored experimentally. Fused Bi at  $280-290^{\circ}\text{C}$  was poured onto an inclined glass

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L 18974-63

ACCESSION NR: AT3001913

2

plate (60-70° slope) held at 30-35°C temperature. Spirals formed without fail. Two hypotheses are possible: (1) The mechanism of their formation is analogous to that of the formation of ordinary dislocational spirals; (2) they form as a result of skeletal growth. The dislocational hypothesis is rejected. It is concluded that the spiral growth is of the skeletal type and appears to be a consequence of a non-uniform temperature-field distribution during the rapid cooling of the poured fusion. "The author takes this opportunity to express his cordial gratitude to G. G. Lemlein and A. A. Chernov for the valuable critical remarks and aid given to him in the selection of the correct explanation of the observed phenomenon." Orig. art. contains 3 figures.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 16Apr63

ENCL: 00

SUB CODE: CH, PH, MA, EL

NO REF SOV: 001

OTHER: 002

Card 2/2

L 19753-63

ENT(1)/ENP(q)/ENT(m)/ENP(B)/BDS . AFFTC/ASD/ESD-3/IJP(C) JD

ACCESSION NR: AT3001942

S/2912/62/000/000/0404/0410

AUTHOR: Kozlovskiy, M. I.

20 E

TITLE: On the effect of an electrical field on the rate of nucleation of crystallization centers

SOURCE: Kristallizatsiya i fazovyye perekhody. Minsk, Izd-vo AN BSSR, 1962, 404-410

TOPIC TAGS: crystal, crystallization, crystallography, electrical, field, nucleation, center, supersaturation, field strength,  $\text{NH}_4^-$

ABSTRACT: The paper describes an experimental investigation of the effect of an electrical field on the process of crystallization from supersaturated solutions of the salts  $\text{NH}_4\text{Cl}$ ,  $\text{NH}_4\text{Br}$ ,  $\text{NH}_4\text{I}$ ,  $\text{NaCl}$ ,  $\text{NaBr}$ ,  $\text{NaF}$ ,  $\text{KI}$ ,  $\text{KCl}$ ,  $\text{CdI}_2$ ,  $\text{NiSO}_4$ , and  $\text{CuSO}_4$ . It was shown that the degree of the effect of an electrical field on the rate of nucleation of crystallization centers (CC) in supersaturated solutions depends on the crystallizing substance; more specifically, it was found that all of the salts tested, except for  $\text{NiSO}_4$  and  $\text{CuSO}_4$ , experienced a significant acceleration of the appearance of new CC's in an electric field of 1-30,000 v/cm. In the solutions of  $\text{NH}_4\text{Cl}$  and  $\text{NH}_4\text{Br}$ , it was found that the mean rate of appearance of

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ACCESSION NR: AT3001942

new CC's is directly proportional to the supersaturation and to the square of the existing electrical potential gradient. In the tests, a drop of the test substance was deposited on a glass base plate placed on a common platform between two metal plates, all of which are situated on a thermostatic microscope table. No physical or electrical contact existed between the metal plate and the drop. An electrical field of 0-50,000 v/cm was established between the two metal plates. At potential gradients of 30-35,000 v/cm an electrical discharge occurred between the two metal plates. The number of CC's was counted by photography, cinematography, and visually. The drop of test solution heated slightly above the saturation temperature ( $T_s$ ) was injected under a layer of vaseline oil. Supersaturation was then achieved by cooling. Thereupon, a constant electrical field was established for 10-30 sec, and the CC's were counted. Numerous tests showed that  $NH_4Cl$  not subjected to an electrical field gave rise to only a single CC and the growth of a single dendrite. The increased number of CC's appearing under the effect of an electrical field obeyed the afore-stated regularities as functions of the supersaturation and the field strength. In addition, the tests show that new CC's appear under the effect of an electrical field, even in a system that is isolated from the ambient T in the absence of microscopic dust particles of the crystallizing substance. An interesting phenomenon which, possibly, may aid in finding an explanation for the mechanism of the formation of CC's in an electrical field is the

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ACCESSION NR: AT3001942

observed massive appearance of CC's following a condenser discharge through the droplet. The author attributes this effect to mechanical action. The tests performed here, as well as those described in the literature, are still inadequate to serve as a foundation for an exhaustive description of the mechanism of nucleation of new CC's in an electrical field in a supersaturated solution. Orig. art. has 6 figures.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 16Apr63

ENCL: 00

SUB CODE: CH, PH, MA

NO REF SOV: 008

OTHER: 000

Card 3/3

S/070/62/007/001/022/022  
E073/E335

AUTHOR: Kozlovskiy, M.I.

TITLE: On the influence of the electric field on the germination of crystallization centres

PERIODICAL: Kristallografiya, v.7, no.1, 1962, 157-159

TEXT: Applying a method proposed by A. V. Shubnikov, the author investigated the influence of a DC field on saturated solutions of salts of halogens and some sulphates. A drop of the investigated saturated solution was placed on a microscope slide and introduced between two metallic plates, which were glued onto the glass surface of the thermostat table of the microscope; there was no contact between the drop and the metal plates. A uniform electric field was applied to the plates, which could be varied within limits up to 30 kv/cm. The saturation temperature of the investigated salt solutions was 20°C and the microscope slide was at 35°C. Therefore, the drop of the solution was gradually heated up to 35°C and evaporated. As a result the solution became super-saturated and crystals began to grow at the edges of the drop. It was found that the influence of the electric field was most

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On the influence of the electric ... S/070/62/007/001/022/022  
E073/E335

pronounced on solutions of  $\text{NH}_4\text{Cl}$  and  $\text{NH}_4\text{Br}$ , for which no new centres formed inside the drop in the absence of an applied field. At a given temperature, the speed of formation of new centres of crystallization per unit of area of an investigated preparation was found to be directly proportional to the degree of saturation of the solution and the square of the voltage of the electric field. It obviously also depends on the substance being crystallized.

This dependence can be expressed thus:

$$v = k(c - c_0)E^2 \quad (1)$$

where  $k$  - proportionality coefficient;  $(c - c_0)$  - saturation;  $E$  - field strength. Photographs are included of four drops of the  $\text{NH}_4\text{Cl}$  solution which were subjected to the effect of electric fields of various strengths. There are 2 figures. ✓

ASSOCIATION: Tiraspol'skiy gosudarstvennyy pedagogicheskiy institut im. T. G. Shevchenko (Tiraspol' State Pedagogical Institute imeni T. G. Shevchenko)

SUBMITTED: April 19, 1960 (initially)  
March 11, 1961 (after revision)

Card 2/2

KOZLOVSKIY, M.I.

Formation of crystallization centers on the surface of aqueous solutions of electrolytes following a spark discharge. Rost krist. 4:27-31 '64. (MIRA 17:8)

KOZLOVSKIY, M.I.

Effect of a glowing electric discharge and impurities on spherulite formation in sulfur films during crystallization from the gaseous phase. Kristallografiia 10 no.1:125-128 Ja-F '65.

(MIRA 28:3)

1. Tiraspol'skiy gosudarstvennyy pedagogicheskiy institut imeni Shevchenko.

L 64539-65 INT(a)/INT(c)/INT(d) 126

ACCESSION NR: AR5018722

UT/0070/65/010/004/0534/0538

AUTHORS: Kozlovskiy, M. I.

TITLE: Effect of a spark discharge on the layer-spiral growth and evaporation of crystals with the participation of drops of the liquid phase

SOURCE: Kristallografiya, v. 10, no. 4, 1965, 534-538

TOPIC TAGS: crystal growing, electric discharge, organic crystal, liquid property

ABSTRACT: A new phenomenon -- the appearance of a considerable number of drops of the melt on the surface of a growing crystal due to a spark discharge -- was investigated on crystals of  $\beta$ -methylnaphthalene, diphenyl,  $p$ -dichlorobenzene, camphor, and other substances. Quantitative measurements were carried out only with  $\beta$ -methylnaphthalene crystals. A specially built thermostat microscope stage was

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1 64539-65

ACCESSION NR: AP5018722

used to keep the temperature of a chamber constant within 0.2°C. The discharge occurred between two steel needles inside the chamber. The temperature of the chamber was measured with copper-constantan thermocouples. A polarizing microscope was used and photographs were taken with ordinary and cine attachments. The discharge was produced by an induction coil with a mechanical interrupter supplied with 50-cycle AC current. It was observed that during a spark discharge close to crystals of certain organic compounds surrounded by their unsaturated vapor there appears on their surfaces a large number of droplets of the melt depositing on the front of the steps and exhibiting the fine structure of planes and grain boundaries otherwise unnoticeable even with the microscope. The times required for obtaining a complete picture of the plane of a growing crystal were investigated as a function of some of the discharge parameters and the distance of the discharge from the crystal. The behavior of the droplets and of the crystal on prolonging the discharge and after it ceases is described. Orig. art. has: 5 figures and 3 photographs.

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L 64539465

ACCESSION NR: AP5018722

ASSOCIATION: Tiraspol'skiy gosudarstvennyy pedagogicheskiy institut  
(Tiraspol' State Pedagogical Institute)

SUBMITTED: 01Dec64

ENCN: 00

SUB CODE: SS

NR REF SOV: 003

OTHER: 001

Card



L 22092-66 EWT(1)/EWT(m)/EWP(t) IJP(c) JD

ACC NR: AP6012942

SOURCE CODE: UR/0070/65/010/001/0125/0128

AUTHOR: Kozlovskiy, M. I.

ORG: Tiraspol' State Pedagogical Institute (Tiraspol'skiy gosudarstvennyy pedinsti-  
tut)

TITLE: Effect of an electric glow discharge and impurities on the formation of  
spherulites in sulphur films during crystallization from the gas phase

SOURCE: Kristallografiya, v. 10, no. 1, 1965, 125-128

TOPIC TAGS: sulfur, glow discharge, spherulite, crystallization, cadmium, zinc,  
aluminum

ABSTRACT: A finely crystalline film is usually formed when sulphur is de-  
posited from the gas phase at atmospheric or reduced pressure onto glass at room  
temperature. A different picture is observed if crystallization occurs in the  
presence of factors tending to form rhombic sulphur before it is deposited on the  
glass. Such factors are Cd, Zn, or Al vapor, or a glow discharge. The deposit  
on the substrate in this case consists of separate small crystals of sulphur,  
around which spherulites or plate-like crystals may grow. This is due to the  
fact, established by the authors, that the majority of the small crystals of  
rhombic sulphur are negatively charged. Evaporation with another substance or in  
the presence of a glow discharge gave almost all the forms of spherulites des-

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UDC: 548.52

L 22092-66

ACC NR: AP6012942

cribed in the literature, with the exception of biaxial spherulites and double rings. When the discharge acts with no admixed substances, what are formed are principally ordinary spherulites, spherulites with a difoil, and oval spherulites, as well as simple plate-like forms. The difoils have a skeleton structure. The oval spherulites are formed by joining two ordinary spherulites.

Use of Cd vapor (with or without field) gives a large number of spherocrystals. Chemical combination of cadmium with sulphur to form Cds gives spherulite formations similar to "flowers." Zn and Hg vapor generally gives spherulites with twisted fibers. Al vapor generally forms ordinary spherulites.

The experiments show that spherulites of sulphur during crystallization from the gas phase result from the formation of isolated centers of crystallization of the rhombic modification, skipping the amorphous stage. Centers may also be formed by a glow discharge. Orig. art. has: 7 figures. [JPRS]

SUB CODE: 20 / SUBM DATE: 06Jan64 / ORIG REF: 006 / OTH REF: 001

Card 2/2 BLC

KOZLOVSKIY, M.M., student I kursa

Secondary electron emission from  $Al_2O_3$ . Sbor.stud.nauch.rab.

LEIS no.1:32-43 '59.

(MIRA 13:4)

1. Leningradskiy elektrotekhnicheskiy institut svyazi imeni  
prof.M.A.Bonch-Bruyevicha.

(Photoelectric multipliers) (Secondary--Electron emission)

KOZLOVSKIY, Mikhail Timofeyevich; PETROV, Vyacheslav Vasil'yevich;  
KHANIN, N.S., kand. tekhn. nauk, retsenzent; FEDOSEYEV, L.N.,  
red.; DONSKAYA, G.D., tekhn. red.

[Fuel equipment of IaAZ2-204 and IaAZ-206 diesel engines; design,  
maintenance and repair] Toplivnaia apparatura dizel'nykh dvigate-  
IaAZ-204 i IaAZ-206; konstruktsiia, obsluzhivanie i remont. Mo-  
skva, Nauchno-tekhn. izd-vo M-va avtomobil'nogo transp. i shos-  
seinykh dorog RSFSR, 1961. 214 p. (MIRA 15:1)  
(Diesel engines)

1ST AND 2ND COVER		PROCESSING AND PROPERTIES INDEX	
CROSS-SECTION ELEMENTS	CROSS-SECTION INDEX	<p>7</p> <p>Detection of cyanides in forensic investigations of internal organs. M. T. Kostovskii. <i>Lab. Probl.</i> (U. S. S. R.) 1959, No. 12, 26-30; <i>Khim. Referat. Zhur.</i> 1960, No. 6, 72. — In spite of the high sensitivity of the Brunswick reaction for the microchem. detection of HCN (based on the formation of AgCN crystals) uncertain results are obtained sometimes, owing to the effect of H<sub>2</sub>S which is formed in the putrefaction processes. K. proposes to modify the Brunswick reaction by treatment of 1-2 cc. of internal organs in a "gas chamber" with 1 cc. of KMnO<sub>4</sub> soln. and 5-10 drops of H<sub>2</sub>C<sub>2</sub>O<sub>4</sub> (or with H<sub>2</sub>SO<sub>4</sub>, 1:5), and covering with a cover glass on the lower surface of which 1 drop of 1% AgNO<sub>3</sub> soln. in 50% HNO<sub>3</sub> had been placed. Characteristic crystals of AgCN (observed under the microscope) are formed. Examples of the application of this reaction are given. W. R. Henn</p>	
		<p>ASR-51A METALLURGICAL LITERATURE CLASSIFICATION</p>	
<p>GROUPS</p>		<p>GROUPS</p>	

**CIA-RDP86-00513R0008259200**

11

11

Drop Method for the Detection of Cadmium. M. T. Kozlovsky, J. A. Mcerson, and N. M. Shikhanova (*Zavol. Lab.*, 1946, 12, (6), 549-550). [In Russian]. It is proposed to use a mixture of a solution of quinine and KI, which gives a precipitate with salts of Cd. Ag, Hg, Pb, Sb, Cu, Bi, and Fe<sup>+++</sup> interfere.—N. A.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

100-22. Constitution of the Phosphate-Vanadate-Molybdate Complex Produced During Colorimetric Determination of Phosphorus by Minsion's Method. (In Russian.) N. V. Maksimova and M. T. Kostovskii. *Zhurnal Analiticheskoi Khimii* (Journal of Analytical Chemistry), v. 2, Nov.-Dec. 1947, p. 353-358.

A formula for the complex compound was established. Possibility of a gravimetric or volumetric determination of P in the presence of large amounts of V by o-hydroxyquinoline precipitation of the complex. 13 ref.

100-22. Constitution of the Phosphate-Vanadate-Molybdate Complex Produced During Colorimetric Determination of Phosphorus by Minsion's Method. (In Russian.) N. V. Maksimova and M. T. Kostovskii. *Zhurnal Analiticheskoi Khimii* (Journal of Analytical Chemistry), v. 2, Nov.-Dec. 1947, p. 353-358.

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111 AND 112 CORDS

PROCESS AND PROPERTIES INDEX

1

CA

Simple apparatus for electrochemical investigations using a diaphragm. M. T. Koslovskii (Kazakh State Univ.), *Zavodskaya Lab.* 13, 239 (1947).—The diaphragm is held in a vertical position between two cylindrical flasks with segments of the sidewalls ground off and the polished edges pressed against the diaphragm, providing a setup with 2 sym. compartments. N. Thom

COMMON ELEMENTS

COMMON TRANSISTOR MODELS

OPEN

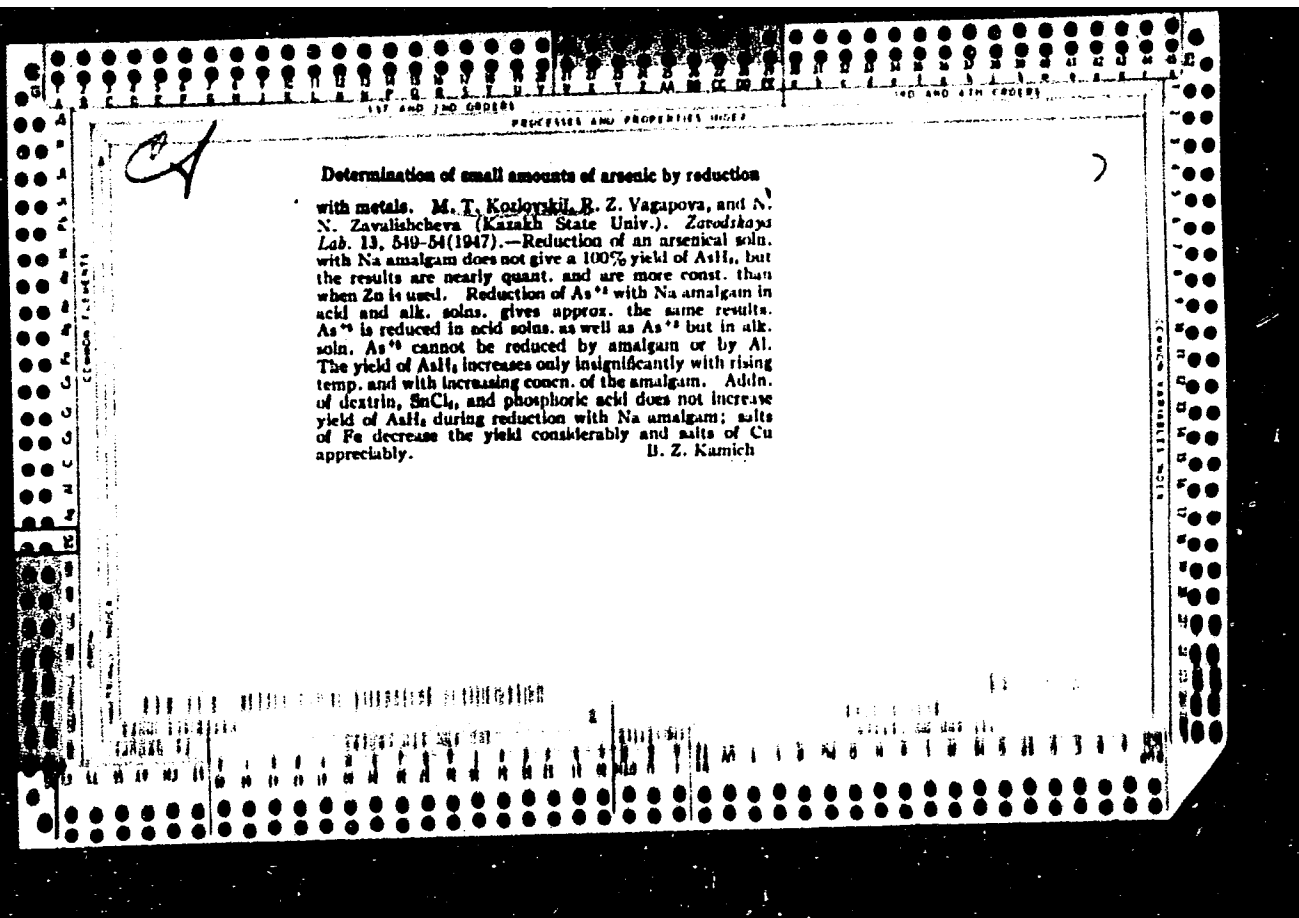
INTERNAL MODELS

ASH-11A METALLURGICAL LITERATURE CLASSIFICATION

FROM SOURCE

REPLIST ONE DIV 111

111 AND 112 CORDS



1ST AND 2ND CODES										3RD AND 4TH CODES									
PROCESSES AND PROPERTIES MOE																			
15																			
<p>Concerning the Possibility of Colorimetric Determination of Molybdenum and Tungsten in the Presence of Nitrates and Nitrites. (In Russian.) O. A. Songina and M. T. Koslovskii. <i>Factory Laboratory</i> (U.S.S.R.), v. 13, June 1947, p. 677-678.</p> <p>Results of experiments show that nitrate ion does not interfere with colorimetric determination of Mo and W by means of lead chloride and thiocyanates of the alkali metals. The presence of nitrites in amounts above 4 mg./ml. makes the determination impossible.</p>																			
METALLURGICAL LITERATURE CLASSIFICATION																			
1ST AND 2ND CODES										3RD AND 4TH CODES									
1ST AND 2ND CODES																			

CA

2

The alleged analogy of the iodine-azide reaction. M. T. Koslovskii (Kazakhskii Gosudarst. Univ. im. Kirova). *Zhur. Obshch. Khim.* (J. Gen. Chem.) 17, 1257-8(1947).  
 —Karauk's interpretation (C.A. 40, 3674<sup>o</sup>) of the decolorization of solns. of iodine, in the presence of a bicarbonate or a phosphate, by  $\text{CNS}^-$  ions, as analog of the catalyzed reaction  $2\text{NaN}_3 + \text{I}_2 \rightarrow 2\text{NaI} + 3\text{N}_2$ , is erroneous. The decolorization corresponds to the stoichiometric equation  $\text{CNS}^- + 4\text{I}_2 + 4\text{H}_2\text{O} \rightarrow \text{CNI} + \text{SO}_4^{--} + 7\text{I}^- + 8\text{H}^+$ , and involves no catalytic effect. The role of the  $\text{HCO}_3^-$  is to neutralize the acid formed, whereas  $\text{HPO}_4^{--}$  acts only as a buffer. N. Thon

SONGINA, O.A.; VOYLOSHNIKOVA, A.P.; KOZLOVSKIY, M.T.

Amperometric titration. Part 1. Izv.AN Kazakh.SSR Ser.khim. no.3:  
81-101 '49. (MLBA 9:8)

(Titration)

7

CA

Separation of zinc from iron by electrolysis with a mer-  
cury electrode. P. P. Esyb and M. I. Korbyak  
(Kazakh State Univ., Zhetysay, Kaz. SSR, 1979)  
(1980). If the Fe content is not over 10 times that of Zn,  
the latter is readily sepd. by electrolysis on a Hg electrode  
at 50-80°C. G. M. Kosolapov

USSR/Chemistry - Bismuth  
Analysis, Chronometric

May 50

"Chronometric Method for Determination of Minimum  
Quantities of Bismuth," M. T. Kozlovskiy, S. P. Gush-  
china, Inst of Chem, Kazakh Affiliate, Acad Sci USSR,  
3 1/2 pp

"Zaved Lab" Vol XVI, No 5

Attempts to establish possibilities for chronometric  
determination of small amounts of bismuth, e.g., to  
establish inverse proportionality between bismuth  
quantity and time required for darkening of solution.  
Finds: chronometric determination of bismuth in quan-  
tities 0.0014-0.045 mg is approximately ten times more  
160FT11

USSR/Chemistry - Bismuth (Contd)

May 50

sensitive than method with potassium iodide. Error of  
determination may amount to up to 10%.

KOZLOVSKIY, M. T.

160FT11

KOZLOVSKIY, M.T.

Metallurgical Abst.  
June 1954  
Electrometallurgy and Electrochemistry

\*Electrolysis of Salts of Copper and Bismuth. M. T. Kozlovsky and P. P. Tayb (Zhur. Priklad. Khim., 1950, 23, (11), 1203-1222).—[In Russian]. K. and Ts. have investigated the dependence of the potential of a Hg cathode in the electrolysis of soln. of salts of Cu and Bi, on the concentration of the metal in the amalgam, at various c.d. and temp.; the dependence of the potential of the anode in the electrolytic decompn. of the resulting amalgam was also studied. The effect of the electrolyte compn. and the rate of agitation were examined only in the case of Cu. Cu and Bi can be quant. recovered from their amalgams by anodic oxidation. Explanations for the observed results are suggested, including changes in the viscosity of the amalgam, and the related changes in the true surface of stirred amalgams.  
—G. V. E. T.  
11-11-54  
mlt



KOZLOVSKIY, M.T.; BUKHMAN, S.P.

Cementation of certain metals from aqueous solutions of their salts.  
Izv.AN Kazakh.SSR.Ser.khim. no.4:3-19 '51. (MIRA 9:5)  
(Metals)

SONGINA, O.A.; VOYLOSHNIKOVA, A.P.; KOZLOVSKIY, M.T.

Amperometric titration. Part 2. Izv.AN Kazakh.SSR.Ser.khim. no.4:  
80-89 '51. (MLRA 9:5)

(Conductometric analysis) (Copper) (Iron)

USSR/Chemistry - Electrolytic Refining of Metals Aug 51

"Electrode Potentials in the Electrolysis of Salts of Different Metals With a Mercury Electrode," P. P. Tayb, M. T. Kozlovskiy, Kazakh State U imeni S. M. Kirov

"Zhur Prik Khim' Vol XXIV, No 8, pp 840-850

By examn of electrolytic deposition at anode and decompn at cathode of Sn and Cd amalgams, established dependence of cathode and anode potentials in respective cases at different temps and cd on (1) concn of metals in amalgams, (2) concn of metal ions in electrolyte, (3) acidity of electrolyte (for Sn). 190128

USSR/Chemistry - Electrolytic Refining of Metals (Contd) Aug 51

Amalgams can be electrolytically decompd. Changed viscosity of amalgam due to changed metal content and changed surface of amalgam due to formation of crystals will affect cd and potentials.

190128

KOZLOVSKIY, M. T.

USSR/Chemistry - Electrolytic Refining of Metals Aug 51

"Electrolysis of Zinc Salts," M. T. Kozlovskiy,  
P. P. Tsyb, Ye. I. Ruzina, Kazakh State U imeni  
S. M. Kirov

"Zhur Prikl Khim" Vol XXIV, No 8, pp 882-886

In electrolytic deposition of Zn on Hg cathode, and  
in electrolytic decompn of resultant amalgam at  
anode, established dependence of potentials of  
cathode and anode in respective cases on (1) concn  
of Zn in amalgam, (2) concn of Zn ions in

190T33

USSR/Chemistry - Electrolytic Refining of Metals (Contd) Aug 51

electrolyte, (3) rate of agitation. Almost total  
electrolytic transfer of Zn from amalgam to elec-  
trolyte is possible.

190T33

KOZLOVSKIY, M.T.

KOZLOVSKIY, M.T.

Chemical Abst.  
Vol. 48 No. 5  
Mar. 10, 1954  
Metallurgy and Metallography

(2)<sup>m</sup>  
Cementation of some metals from aqueous solutions of their salts. M. T. Kozlovskii and S. P. Bukhman. *Izvest. Akad. Nauk Kazakh. S.S.R. No. 101, Ser. Khim. No. 4, 3-10 (1951); cf. C.A. 48, 1878e.*—The theoretical aspects of cementation of metals from soln. are discussed with numerous references (Russell and Carver, *C.A.* 32, 7332). The effects of the nature of the metal, of the soln., temp., agitation, and completeness of the process are reviewed. The exptl. study was made with HCl solns. of Bi with Cd, Fe, and Pb plates; the cementation of Bi on Cd and Fe occurs at nearly the same rate; it is considerably less rapid on Pb provided the total amt. of Bi is small (10 mg.). At small levels of Bi the rate is approx. equal in all cases. Cementation of Sb from  $H_2SO_4$ -HCl soln. on Cd and Fe was also examined. The cementation on Cd is very inefficient and yield of 10% was common. Fe is considerably more effective. Addn. of Cu to the soln. aids cementation of Sb on Fe or Cd making Cd utilization approach 100%; even small amts. of Cu are effective owing to lower H overvoltage on Cu than on Cd. Large concns. of Cu cause a drop in utilization of Cd owing to decreased area of anodic regions (pure Cd surface). At low concns. added Hg increases the sepn. of Sb; at high concns. no effect is observed. The results are discussed generally in light of electrochem. phenomena.  
G. M. Kosolapoff

KOZLOVSKIY, M-T.

Chemical Abst.  
Vol. 48 No. 4  
Feb. 25, 1954  
Analytical Chemistry

Amalgam methods of separation and determination of nonferrous metals, M. T. Kozlovskiy, P. P. Tsyb, and B. F. Speranskaya. *Trudy Komissii Anal. Khim. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 4(7), 255-62 (1952).

The metals were sepd. by electrolysis of their solns. with Hg cathode and subsequent anodic oxidation of the amalgams obtained, with both processes at controlled electrode potentials. Zn was pptd. from its soln. with Na amalgam. Curves showing the dependence of cathode potential on c.d. were plotted for Cu, Bi, Sn, Cd, Zn, and Fe with the Hg cathode. For all the curves the amalgam contained 1 g.-atom of metal per l. of Hg, the electrolyte contained 0.1 g.-ion of metal and 1 g.-equiv.  $H_2SO_4$ , except for Bi when the electrolyte contained 0.0193 g.-ion Bi and 2 g.-equiv.  $H_2SO_4$  per l. Temp. was 18-23°; r.p.m. of stirrer was 468. Curves show that Cu and Bi could be sepd. from the other metals, Sn and Cd could be sepd. from Zn and Fe, but Zn and Fe could not be sepd. Similar curves, under the same conditions, were plotted for the anodic decompn. of the amalgams. This decompn. did not occur reversibly. Decompn. of Fe began at a more pos. potential than the potential for depositing of Fe on Hg. This was explained as a result of anodic passivation of Fe. Ni and Co amalgams showed passivation at their anode decompn. Zn and Fe were sepd. by conversion to amalgams and anodic oxidation of their amalgams at a detd. potential. Fe remained in Hg. Thus an Fe-free Zn soln. was obtained from 0.01 g. Zn and 0.1 g. Fe. When the method was carried out twice on a sample, 0.03 g. Zn was sepd. quantitatively from 0.8 g. Fe. C.d. at the cathode was 0.031 amp./sq. cm., temp. 70-80°. Fe and Zn were not sepd. by shaking their soln. with Na amalgam. Al did not ppt. Zn completely from the Zn soln. By internal electrolysis with Na amalgam 0.125 g. Zn was sepd. from soln. in 1 1/2 hrs. In alk. solns. the Zn deposit was porous and black, but addn. of plumbite (approx. 1% of amt. of Zn) gave a bright deposit. In 1 hr. (with plumbite) 0.188 g. Zn was completely pptd. by Na amalgam upon a silvered Pt cathode. The current was 0.35 amp. at the start and 0.02 amp. at the finish. Zn could also be deposited from an alk. tartrate soln.

Enrilla Mayerle

MF  
7-13-54

KOZLOVSKIY, M-T.

Chemical Abst.  
Vol. 48 No. 4  
Feb. 25, 1954  
Analytical Chemistry

*Cementation as a method for separating metals. M. T. Kozlovskii, S. P. Bukhrman, and A. T. Malyuk. Trudy Komissii Anal. Khim., Akad. Nauk S.S.S.R., Otdel. Khim. Nauk 4(7), 283-73(1953).—Expts. on the cementation of Bi and Sb on Cd, Fe, and Pb, of Cd and Pb on Na amalgam, and of Cd on Zn amalgam are described. For the Bi and Sb expts. sheets of metal were placed in boiling HCl or HCl-*

(over)

H<sub>2</sub>SO<sub>4</sub>. For large concns. of Bi the rate of cementation depended on the potential of the cementing metal. For small concns. of Bi the rate depended on the diffusion rate of the Bi ions. When 10.8 mg. Bi in 100 ml. of soln. was treated with Cd, Fe, and Pb, 53, 12, and 95%, resp., of the amt. of metal added was used to ppt. Bi. The rest of the metal was used in forming H<sub>2</sub>. In 25 min. 89, 85, and 70% of the Bi was sepd. by Cd, Fe, and Pb, resp. The reaction rate could not be calcd. exactly because the area of the electrode surfaces changes. When 1.00 mg. Bi in 100 ml. was treated with Cd, Fe, and Pb, 13, 1.4, and 0%, resp., of the metal added was used to ppt. Bi. In 25 min. 50, 70, and 0% of the Bi was sepd. by Cd, Fe, and Pb, resp. When 100 mg. of Pb ion was added, 1 mg. Bi in 100 ml. was 98% sepd. on Cd, and no H was formed. Similarly in 25 min., 0.11 mg. Bi was 90% sepd. on Cd, and almost no Cd was used for H formation. Fifty mg. Sb was sepd. quantitatively on Cd when 20, 80, and 160 mg. Cu ion were added, with 90, 71, and 50%, resp., of the added Cd used for H formation. Cu formed a compd. with the Sb and raised the discharge potential of Sb ions. When Sb was cemented on Fe, Cu ion gave similar results. Expts. with amalgams were conducted in 100-ml. beakers at 20° with const. speed for the stirrer. These results were obtained for 0.1120 g. Cd after 20 min. of

treatment with Na amalgam. Cd alone was not sepd. quantitatively on the Na amalgam. In neutral and in 0.1N acid solns. by addn. of 0.0651 g. Zn ion before addn. of Na amalgam 100% of the Cd was sepd., with 52.5 and 22.8% of the added Na used for Cd sepn. In neutral and 0.1N acid solns. with 0.0588 g. Ni ion 57.2 and 64.3% Cd, resp., was sepd., with 20 and 32%, resp., of the added Na used for Cd sepn. In neutral and 0.1N acid solns. with 0.0558 g. Fe ion resp., of the added Na used for Cd sepn. In neutral and 0.1N acid solns. with 0.0638 g. Cu ion 98.7 and 100% Cd, resp., was sepd. with 49.4 and 22.2%, resp., of the added Na used for Cd sepn. With Ni, chiefly Cd was cemented first. In neutral soln. with Cd and Fe (or Cd and Ni) neither metal transferred completely to the H<sub>2</sub>. In 0.1N acid both Cd and Cu transferred completely to the H<sub>2</sub>. Other metals, Zn amalgam sepd. Cd faster than Na amalgam. In acid soln., Zn amalgam had little effect on Ni and Fe. In alk. soln., Pb could be sepd. quantitatively on Na amalgam, but 80% of the added Na was used for H formation. Here 1% amalgams gave better results than 0.5% amalgams. With 1% Na amalgam well-formed cubic crystals belonging to the triad system were formed. Their approx. compn. was Hg 99, Pb 0.27, and Na 0.55%. Sn could not be cemented by Na amalgam in air.

Kurilla Mayerle



SONGINA, O.A.; VOYLOSHNIKOVA, A.P.; KOZLOVSKIY, M.T.

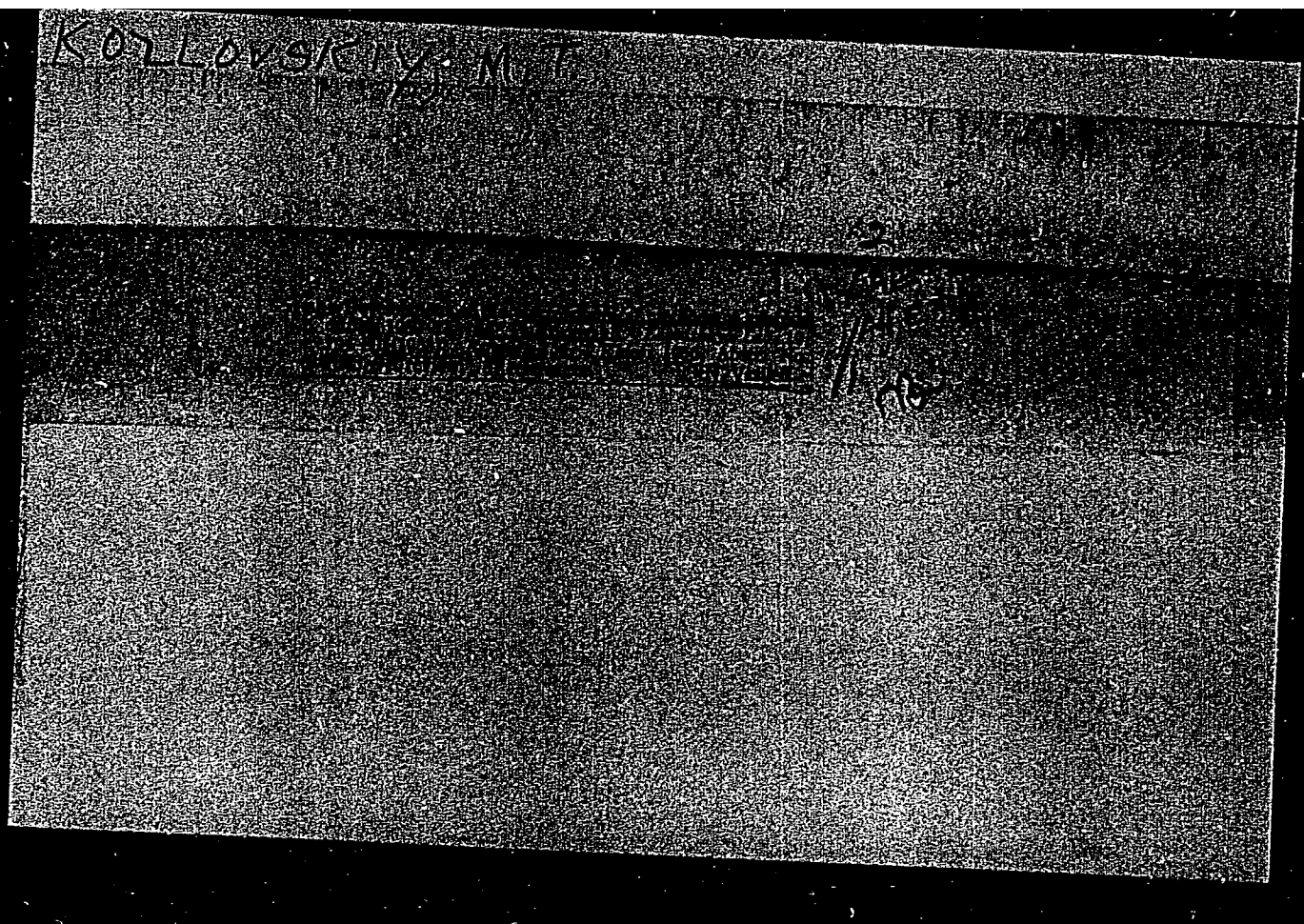
Amperometric titration. Part 3. Amperometric determination of  
phosphates. Izv.AN Kazakh.SSR Ser.khim. no.5:3-13 '53.(MLRA 9:5)  
(Conductometric analysis) (Phosphates)

KOZLOVSKIY, M.T.; BUKHMAN, S.P.

Polarography of salts of various metals with the aid of amalgam electrodes. Izv.AN Kazakh.SSR Ser.khim. no.5:14-21 '53.

(MLRA 9:5)

(Polarography) (Salts)



KOZLOVSKIY, M.T.

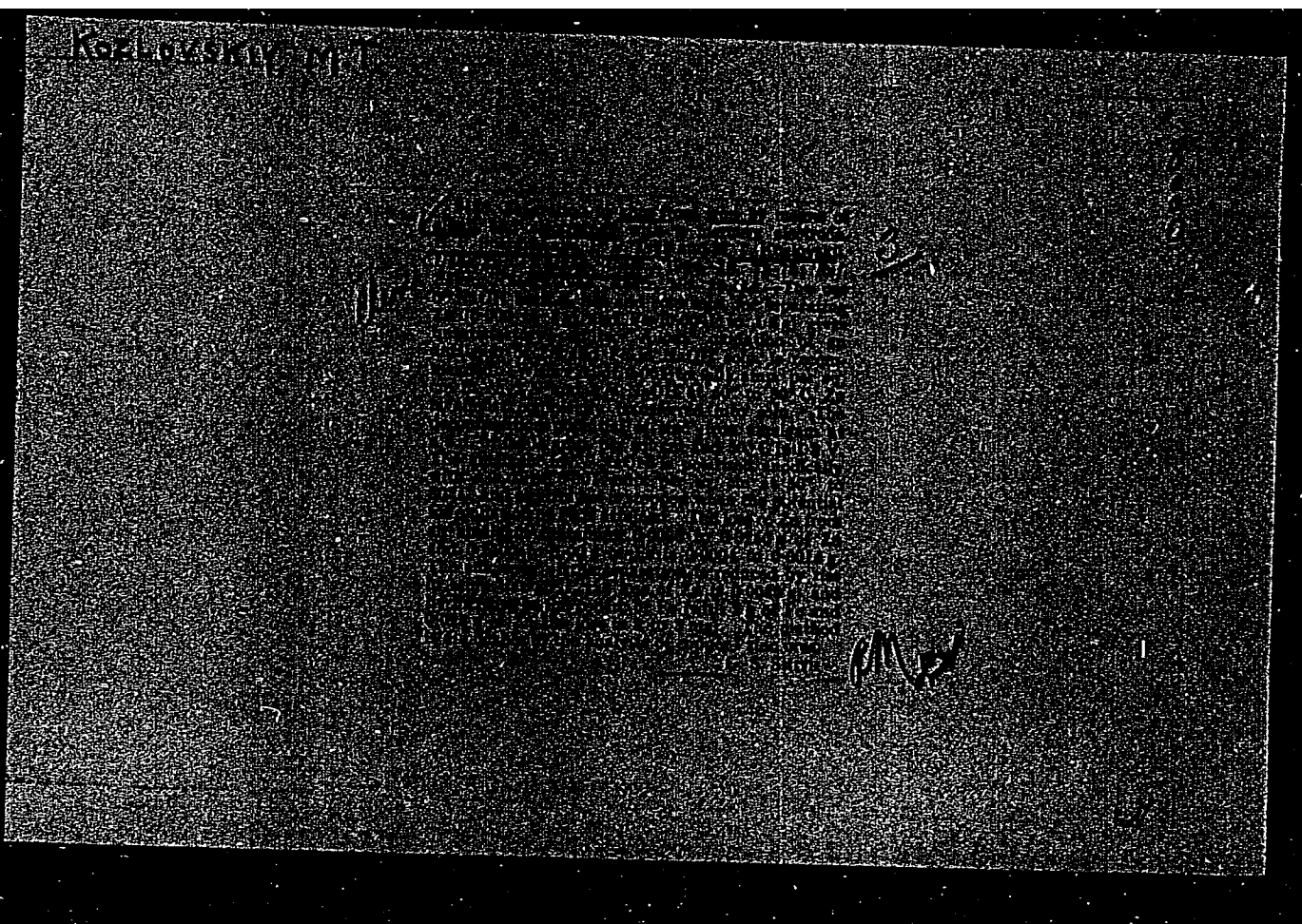
Chemical Abst.  
Vol. 48 No. 5  
Mar. 10, 1954  
Analytical Chemistry

Amperometric titration. V. Determination of calcium and fluorine by the anodic ferrocyanide method. O. A. Sengina, A. P. Voloshnikova, and M. T. Kozlovskii. *Izv. Akad. Nauk Kazakh. S.S.R. No. 118, Ser. Khim., No. 6, 69-77(1953); cf. Zavodskaya Lab. 4(1952).*—The anodic amperometric detn. of Ca and F is described; this can be run in solns. contg. considerable Na salts provided  $\text{NH}_4^+$  ions are present. Mg and Al interfere with the detn. of Ca and F by reacting with ferrocyanide and with F. Ca can be detd. only in neutral or AcOH solns.; in  $\text{H}_2\text{SO}_4$  the detn. is impossible owing to formation of  $\text{CaSO}_4$ . Typical titration curves are shown. G. M. Kosolapoff.

MF  
7-27-54

KOZLOVSKIY, M. T.

The rate of the process of cementation. M. T. Kozlovskiy (S. M. Kirov State Univ., Kazakh). *Vysk. Akad. Nauk Kazakh. S.S.R.* 11, No. 4 (Whole No. 109), 103-105 (1964). The process of cementation, i.e., displacement of metals from salts of their salts by other metals, was examined polarographically. Typical theoretically expected polarographic curves are shown for several types. Cementation is more rapid when it is performed by an amalgam of a more electroactive metal at least until the concn. of the metal being cemented drops to a level at which only the limiting current can pass. Since the polarographic curve for  $O_2$  lies at a more pos. potential than do the curves of many metals, cementation is usually accompanied by reduction of dissolved  $O_2$ .  $H_2$  evolution can occur only when the amalgam used is made with very electroactive metals. The process proceeds more rapidly at higher temp. The concn. of the metals in the Hg amalgam used for cementation plays but a small role in respect to the rate of cementation. O. M. K.



Am. J. Physiol. 265:R1055-R1062, 1993. ISSN 8750-7588.

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During the last 10 years, the study of the effects of the sympathetic nervous system on the heart has been the subject of intense research. The effects of the sympathetic nervous system on the heart have been studied in many experimental models, including the intact animal, the isolated heart, and the isolated cardiac myocyte. The effects of the sympathetic nervous system on the heart have been studied in many experimental models, including the intact animal, the isolated heart, and the isolated cardiac myocyte. The effects of the sympathetic nervous system on the heart have been studied in many experimental models, including the intact animal, the isolated heart, and the isolated cardiac myocyte.

Kozlovskiy, M.T.

USSR

✓ Conditions of formation and role of the bivalent chromium ions in electrolysis of chromium-ammonium sulfate. Influence of various factors on process of formation of bivalent chromium ions by electrolysis. P. L. Zelenin and M. T. Kozlovskiy. *Izv. Akad. Nauk Kazan. S.S.R., Ser. Khim.* 1952, No. 8, 64-70 (in Russian).—Cathodic formation of  $Cr^{++}$  was studied in solns. of  $Cr-NH_4$  alum in  $H_2SO_4$  solns. in a diaphragm cell with Pb anode, and flowing  $H_2SO_4$  solns. in the anode compartment. Cathodic  $H_2$  was simultaneously evolved. Fe, Zn, Al, and Pb were investigated as cathode materials; the yield of  $Cr^{++}$  increased with increase in  $H_2$  overvoltage of the cathode material. Reducing the metal surface, thereby increased yield. Further the yield was increased by increase in temp. between 15 and 60°, and decreased in cathodic c.d. and acidity. The acidity became more important at lower c.d. The highest (37%) electrochem. yield was obtained at 60 g. Cr and 25 g.  $H_2SO_4$  per l. at 60° and c.d. 300 amp. per sq. m. Polarization curves for  $Cr^{++} \rightarrow Cr^{+++}$  were calcd. A. D.



KOZLOVSKIY, M.T.

Amalgam metallurgy as one of the problems of new technology.  
Vest.AN Kazakh.SSR 11 no.11:16-23 N '55. (MLRA 9:3)

1. Chlen-korrespondent AN KazSSR.  
(Amalgams)

KOZLOVSKIY, M.T., doktor khimicheskikh nauk; SHCHERBOV, D.P.

"Nonferrous metal ore analysis." Fainberg. Reviewed by M.T.Kozlovskii, D.P.Shcherbov. Zav.lab. 21 no.2:255-256 '55.(MLRA 8:6)

1. Chlen-korrespondent Akademii nauk KazSSR (for Kozlovskiy).
2. Starshiy khimik Kazakhskogo geologicheskogo upravleniya (for (Metallurgical analysis) (Nonferrous metals) Shcherbov).



KOZLOVSKIY, Mikhail Tikhonovich; GLAZYRINA, D.M., redaktor; USANOVICH,  
M.I., redaktor; FEDOROV, N.V., tekhnicheskiy redaktor.

[Mercury and amalgams in electro-chemical methods of analysis]  
Rtut' i amal'gamy v elektrokhimicheskikh metodakh analiza. Alma-  
Ata, Izd-vo Akademii nauk Kazakhskoi SSR, 1956. 185 p. (MLRA 9:4)  
(Mercury) (Amalgams) (Electrochemistry)